Name _____ Date _____ Class _____

Key Concept Builder

LESSON 1

Mendel and His Peas

Key Concept Why did Mendel conduct cross-pollination experiments?

Directions: *On the line before each definition, write the letter of the term that matches it correctly. Each term is used only once.*

_____ **1.** the passing of traits from parents to offspring

_____ **2.** the study of how traits are passed on

_____ **3.** when pollen from one plant lands on the pistil of a flower on the same plant

_____ **4.** when pollen from one plant reaches the pistil of a flower on a different plant

_____ **5.** bees, wind, and water

_____ **6.** easily noted characteristics

_____ **7.** when offspring are the same as the parent

_____ **8.** source of pollen

_____ **9.** receiver of pollen

A. self-pollination

B. pistil

C. pollen carriers

D. stamen

E. heredity

F. cross-pollination

G. true-breeding plant

H. observable traits

I. genetics

Name _____ Date _____ Class _____

Key Concept Builder

LESSON 1

Mendel and His Peas

Key Concept Why did Mendel perform cross-pollination experiments?

Directions: *On each line, write the term from the word bank that correctly completes each sentence. Each term is used only once.*

color	**cross-breeding**	**cross-pollination**	**first**
hybrid	**length**	**reproduce**	**second**
self-pollination	**traits**	**true-breeding**	

1. Gregor Mendel experimented with pea plants because they _____ quickly and have easily observed _____, and because he could control which plants reproduced.

2. Pollination in pea plants can occur in the following two ways: _____ or _____.

3. Mendel started with _____ plants—plants with the exact same characteristics from one generation to the next.

4. Those characteristics included the _____ of the flowers and the _____ of the stems.

5. By _____ different pea plants, Mendel produced a variety of _____ plants.

6. He noted that characteristics that were not present in a _____-generation cross showed up in about 25 percent of the plants in a _____-generation cross.

Name _____ Date _____ Class _____

Key Concept Builder

LESSON 1

Mendel and His Peas

Key Concept What did Mendel conclude about inherited traits?

In his experiments with pea plants, Mendel concluded that some traits are dominant and others are recessive.

Directions: *On the line before each trait, write* D *if it is dominant or* R *if it is recessive.*

_____ **1.** white flowers

_____ **2.** purple flowers

_____ **3.** yellow seeds

_____ **4.** green seeds

_____ **5.** wrinkled seeds

_____ **6.** round seeds

_____ **7.** smooth pods

_____ **8.** bumpy pods

_____ **9.** short stems

_____ **10.** long stems

Directions: *On the line before each statement, write* T *if the statement is true or* F *if the statement is false.*

_____ **11.** Mendel concluded that each trait he observed was controlled by two factors—one from the egg cell and the other from the sperm cell.

_____ **12.** He called them factors because nothing was known about genes in his time.

_____ **13.** He concluded that a recessive factor always blocks a dominant factor.

Name _____ Date _____ Class _____

Key Concept Builder

LESSON 1

Mendel and His Peas

Key Concept How do dominant and recessive factors interact?

Directions: *On the line before each pea-pod cross, write the letter of the most likely outcome.*

_____ **1.** a true-breeding purple-flower plant crossed with a true-breeding white-flower plant
- **A.** all white-flower plants
- **B.** all purple-flower plants
- **C.** mostly purple-flower plants

_____ **2.** a cross between two hybrid purple-flower plants (purple and white)
- **A.** all purple flower plants
- **B.** mostly white-flower plants
- **C.** mostly purple-flower plants

_____ **3.** a hybrid purple-flower plant (purple and white) crossed with a true-breeding white-flower plant
- **A.** all purple-flower plants
- **B.** mostly purple-flower plants
- **C.** half purple-flower plants and half white-flower plants

Directions: *Answer each question on the lines provided.*

4. Why would it have been impossible for Mendel to create heterozygous pea plants with short stems, green seeds, or bumpy pods?

_____

_____

_____

_____

_____

_____

5. Out of the many hybrid pea plants that Mendel crossed, about what percent of the second-generation plants had

a. the dominant form of each trait? _____

b. the recessive form of each trait? _____